

## Quick Guide: Power Purchase Agreements

The U.S. Department of Energy (DOE) Federal Energy Management Program (FEMP) facilitates the Federal Government's implementation of sound, cost-effective energy management and investment practices to enhance the nation's energy security and environmental stewardship. Providing support and technical assistance to Federal agencies interested in power purchase agreements (PPAs) is part of that mission.

The Energy Policy Act (EPA) of 2005 requires no less than five percent of total agency electricity consumption to come from renewable energy in fiscal year (FY) 2010 through FY 2012, and no less than 7.5 percent thereafter. Renewable electricity generated on Federal agency land or buildings and used by that agency receives double credit toward this goal (see Section 3.4 of *FEMP Renewable Energy Requirements Guidance for EPA 2005 and Executive Order 13423*). In addition, Executive Order 13514 requires Federal agencies to inventory and reduce greenhouse gas (GHG) emissions.

On-site renewable energy generation projects can help Federal agencies meet Federal goals and requirements. Power purchase agreements are an emerging financing option for on-site renewable energy generation projects. Already common in the private sector, PPAs are gaining momentum in the Federal sector.

### Overview

Power purchase agreements allow Federal agencies to implement on-site renewable energy projects with no upfront capital costs. A developer installs a renewable energy system on Federal land or buildings. In exchange, the agency agrees to purchase the power generated by the system. These power purchase payments repay the developer over the contract term. The developer owns, operates, and maintains the system for the life of the contract.



The U.S. Coast Guard Petaluma Site financed an 850 kW PV system through a PPA.

Completed Federal PPA projects include:

- 14.2 megawatt (MW) photovoltaic (PV) array at Nellis Air Force Base. The project is the largest Federal PV system in the United States.
- 2 MW PV system at U.S. Army Fort Carson.
- 2 MW from three PV systems at the National Renewable Energy Laboratory (NREL).
- 500 kilowatt (kW) PV rooftop system on the U.S. General Services Administration's (GSA) Sacramento Federal Building
- 850 kW PV system at the U.S. Coast Guard Petaluma site.

While these examples are all PV projects, PPAs can be implemented for projects using other renewable energy resources.

### FEMP Services

FEMP assists Federal agencies throughout the PPA evaluation and implementation process. Technical assistance and training opportunities are also available.

Additional information is available online at:

[www.femp.energy.gov/financing/power\\_purchase\\_agreements.html](http://www.femp.energy.gov/financing/power_purchase_agreements.html)



DOE financed a 720 kW PV system on the mesa top behind NREL

## Getting Started

The following questions are designed to help Federal agencies determine if a PPA is right for their proposed project and to gather necessary background information. This basic information should be collected prior to moving forward with a project. FEMP is available to assist with this initial evaluation and project implementation.

### PPA Legality

- Are PPAs legal in your state or utility service territory? The Database of State Incentives for Renewables and Efficiency (DSIRE) provides PPA legality information by state at: [www.dsireusa.org/documents/summarymaps/3rd\\_party\\_ppa\\_map.pptx](http://www.dsireusa.org/documents/summarymaps/3rd_party_ppa_map.pptx)

### Basic Project Information

- What is the proposed renewable energy project (type, location, size, estimated generation)?
- Do you have management approval for use of the land/roof?
- Where will the electricity be used? Will generation exceed load?

### Basic Site Information

- What goals do you want to accomplish with this renewable energy project (Federal renewable energy and/or GHG emissions goals, electric rate cost stability, other)?
- What is your site's electricity use (annual usage, peak demand, and average demand)?
- What are your electricity costs (energy rate and demand charge)? Are rates differentiated (peak/non-peak or time-of-use)?



View of the 500 kW PV system on the rooftop of the GSA Sacramento Federal Building

### Project Cost Effectiveness

- Has a renewable screening/assessment been performed recently at your site? Does the project have an acceptable levelized cost of energy range based on the assessment assumptions?
- What incentives are available (rebates, tax treatment, etc.)? DSIRE outlines incentive information at: [www.dsireusa.org](http://www.dsireusa.org)
- Have you considered renewable energy certificate (REC) ownership?

### Considerations

- Have you talked to your serving utility about this project? For example, what are the interconnection costs, timelines, queues, and other related issues?
- Who owns the land and pays the utility bill? Have you discussed the project with them?
- Other important considerations include contract length, National Environmental Policy Act (NEPA) requirements, and land use agreements (leases, easements, etc.).

## Resources

Additional information is available online at:

FEMP Web site  
[www.femp.energy.gov/financing/power\\_purchase\\_agreements.html](http://www.femp.energy.gov/financing/power_purchase_agreements.html)

Guide to Purchasing Green Power  
[www.femp.energy.gov/pdfs/purchase\\_green\\_power.pdf](http://www.femp.energy.gov/pdfs/purchase_green_power.pdf)

FEMP Renewable Energy Requirements Guidance for EPC 2005 and Executive Order 13423  
[www.femp.energy.gov/pdfs/epact05\\_fedrenewenergyguid.pdf](http://www.femp.energy.gov/pdfs/epact05_fedrenewenergyguid.pdf)

## Contacts

For further information and assistance, contact:

Tracy Logan  
Federal Energy Management Program  
202-586-9973  
[tracy.logan@ee.doe.gov](mailto:tracy.logan@ee.doe.gov)

Chandra Shah  
National Renewable Energy Laboratory  
303-384-7557  
[chandra.shah@nrel.gov](mailto:chandra.shah@nrel.gov)

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